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A SYNOPSIS OF THE AMERICAN SPECIES OF THE GENUS *ORYTTUS* (HYMENOPTERA, SPHECIDAE)

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The American species of *Oryttus* were assigned by Pate (1938) to *Harpactostigma* Ashmead of which the type species, *velutinus* Spinola, is Chilean. However, the close relationship to *Oryttus* from Europe is obvious, and *Harpactostigma* seems hardly worth distinguishing, even as a Chilean subgenus.

Oryttus is composed of about a dozen species of slender, medium-sized wasps, with long antennae and mostly with some rough thoracic sculpture. Seven species occur in the New World and five of these have the forefemur of the male greatly expanded. Females of *Oryttus* have the forepulvillus much larger than the pulvilli of the other legs. Contrastingly, the males have the hindpulvilli the largest. Another morphological curiosity is the presence in males of at least 5 of the known species of one midtibial spur instead of two spurs as usual in Gorytini. Other features are: inner eye margins essentially parallel or converging a little below; forewing spotted or clouded; hindwing cu-a strongly curved near cubitus; tergite I at least a little constricted toward base of II, curved gently toward base in profile; male sternite VIII bispinose apically and usually protruding.

Nests are provisioned with cicadellids or fulgorids.

Holotypes of the new species are deposited in the California Academy of Sciences, San Francisco (*O. lapazae*) or the Entomology Museum of the University of California at Davis (*O. yumae*).

Key to New World species of *Oryttus*

1. Hindfemur with non-black area more than one-half yellow, or ab-

dominal markings whitish; male with two midtibial spurs; male forefemur with ventral depression, if any, occupying no more than basal one-half (figs. 5 to 7) 2

Hindfemur with non-black area more than one-half red, abdomen without white markings; male with only one mid-tibial spur; male forefemur with ventral depression occupying basal two-thirds or more (figs. 1 to 4) 4

2. Tergite I in dorsal view about as broad basally as apically; abdominal bands whitish; femora red; scutum all black and coarsely striatopunctate (Chile) ..... *velutinus* (Spinola)

Tergite I in dorsal view much broader toward apex; scutum yellow laterally and finely to moderately punctate (North America) 3

3. Propodeum with "cheeks" only slightly roughened; male forefemur not depressed beneath basally (fig. 6) (s. California) ..... *umbonatus* (Baker)

Propodeum with "cheeks" strongly and closely roughened; male forefemur with basal one-half beneath hollowed (fig. 5) and conspicuously hairy (Shasta Co. to Nevada Co., California) ..... *mirandus* (W. Fox)

4. Propodeal "cheeks" polished; male forefemur nearly one-half as broad as long (fig. 3) 5

Propodeal "cheeks" roughened 6

5. Abdomen predominantly black, marked with yellow (e. of 100th meridian) ..... *gracilis* Patton *s. s.*

Abdomen predominantly yellow, marked with red and black (w. of 100th meridian) ..... *gracilis arapaho* Pate

6. Scutum coarsely punctate, punctures considerably larger than those of interocellar area; male forefemur more than one-half as broad as long, greatest breadth near middle of femur (fig. 1) (Baja California, Mexico) ..... *lapazae* R. Bohart

Scutum with fine to moderate punctation, punctures not larger than those of interocellar area; male forefemur with greatest breadth beyond middle (figs. 2, 4) 7

7. Propodeum red except for enclosure; wings strongly bicolored; male forefemur about three times as long as broad (fig. 4); flagellar article VIII shorter along midventral line than preceding two articles together (fig. 9) (sw. U. S.) ..... *yumae* R. Bohart

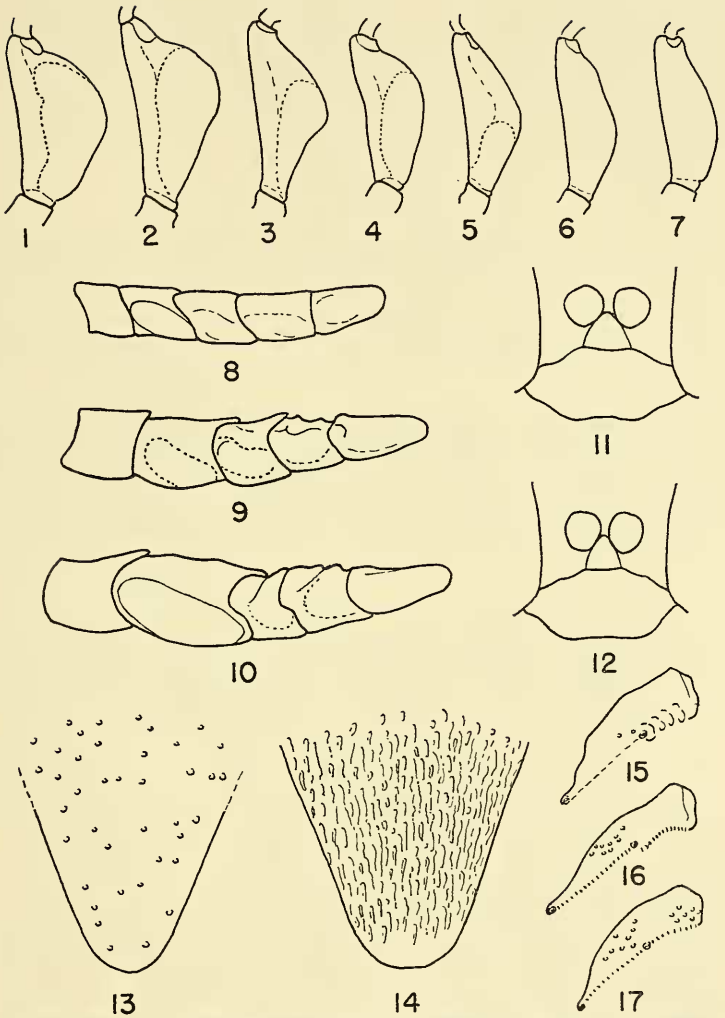
Propodeum black with two large yellow spots; male forefemur about twice as long as broad (fig. 2); flagellar article VIII along midventral line about as long as preceding two articles together (fig. 10) (w. U. S.) ..... *laminiferus* (W. Fox)

Oryttus gracilis gracilis (Patton)

Hoplisus gracilis Patton, 1879. Canad. Ent. 11:210.

Female holotype, Southington, Connecticut (type lost).

The mostly red legs, polished propodeal "cheeks", small subantennal triangle (about one-fourth as broad as frons at that point (fig. 12), and



FIGURES. 1–7, male forefemur from beneath. FIG. 1, *O. lapazae*. FIG. 2, *O. laminiferus*. FIG. 3, *O. gracilis*. FIG. 4, *O. yumae*. FIG. 5, *O. mirandus*. FIG. 6, *O. umbonatus*. FIG. 7, *O. velutinus*. FIGS. 8 to 10, last five articles of male flagellum from beneath. FIG. 8, *O. velutinus*. FIG. 9, *O. yumae*. FIG. 10, *O. laminiferus*. FIGS. 11 and 12, center of male face. FIG. 11, *O. lapazae*. FIG. 12, *O. gracilis*. FIGS. 13 and 14, female pygidium. FIG. 13, *O. yumae*. FIG. 14, *O. laminiferus*. FIGS. 15–17, male metapleuron. FIG. 15, *O. gracilis*. FIG. 16, *O. lapazae*. FIG. 17, *O. yumae*.

coarsely reticulate upper metapleural suture (fig. 15) characterize the species. The typical form has very dark wings and tergites II and following black with narrow yellow bands. This species, as a whole, shows much the same color range as its largely sympatric, but more common relative, *Pseudoplisus phaleratus* (Say). The distribution of the typical subspecies covers much of eastern United States to the 100th meridian.

Oryttus gracilis arapaho (Pate)

Harpactostigma arapaho Pate, 1938. Trans. Amer. Ent. Soc. 64: 67. Female holotype, Roggen, Colorado (Mus. Comp. Zool. Harvard). New status.

Harpactostigma rutilum Pate, 1938. Trans. Amer. Ent. Soc. 64:69. Male holotype, El Paso, Texas (Acad. Nat. Sci. Phil.). New synonymy.

An examination of Pate's types as well as new material have shown the relationship to *O. gracilis*. The extensive red markings and mostly yellow abdomen characterize the subspecies which occurs from western Texas and Kansas to Colorado. New records are: one pair, Roggen, Colorado, 8 July 1933 (M. James, L. Ireland); one male, Brookville, Kansas, 11 June 1950 (C. D. Michener).

Oryttus laminiferus (W. Fox)

Gorytes ruficornis Provancher, 1888 (nec *G. ruficornis* Latreille, 1805). Addit. Corr. Faune Ent. Canada Hym., p. 273. Holotype female, "Californie" (Laval Univ., Quebec).

Gorytes laminiferus W. Fox, 1895. Proc. Acad. Nat. Sci. Phil. 47: 532. Holotype male, Washington Territory (Acad. Nat. Sci. Phil.).

Gorytes flavicornis Baker, 1907. Invertebrata Pacifica 1:162. Holotype male, Claremont, California (Pomona College).

Gorytes rufulicornis Maidl and Klima, 1939. Hym. Cat., Pars 8, Sphecidae 1:102. New name for *ruficornis*.

This species, while not at all common, is the most widespread of the western forms. I have seen specimens from California, Oregon, Nevada, Idaho, and Utah.

The mainly black and yellow body, reddish-brown wings, sculptured propodeal "cheeks", broadly expanded male forefemur (fig. 2), relatively long male flagellar article VIII (fig. 10), and striatopunctate female pygidium (fig. 14) distinguish the species.

Oryttus lapazae R. Bohart new species

Male holotype: Length 11 mm. Mostly orange-red and yellow, a little black. Yellow are: scape in front, face nearly to midocellus, pronotum all across, scutellum and metanotum mostly, forelegs and midlegs

extensively, hindfemora distally, hindtibia outwardly, hindtarsus mostly, tergites I to III broadly at apex, IV to V mostly; black are: broad area around ocelli, scutellum in front, stain along metapleural suture, propodeal enclosure, coxae partly; wings mostly brown, stigma and costal cell more reddish. Pubescence fine, silvery to fulvous, inconspicuous. Punctation fine to moderate, coarse on scutum where punctures are 0.5 to 2.0 diameters apart, close and smaller between ocelli, smaller and scattered on scutellum, mesopleuron and toward apices of tergites. Flagellar article VIII modified as usual but only about 1.5 times as long as either VII or IV in midline; frons narrowed slightly and gradually below, least interocular distance a little more than eye breadth in front view, subantennal triangle one third of frons breadth (fig. 11); propodeum closely and coarsely sculptured, enclosure obliquely striate; metapleural suture finely punctate throughout (fig. 17); forefemur expanded, flattened, concave beneath, free edge thin and curving forward, greatest breadth near middle and about three-fifths length of femur (fig. 1); midtibia with only one apical spur; tergite I in dorsal view nearly one-half as broad as long and about one-half as broad as tergite II; points of sternite VIII separated by about a midocellus diameter.

Holotype male (CAS) La Paz, Baja California, Mexico, 7 October 1955 (F. X. Williams).

Known only from the type, *O. lapazae* is distinguished by the unusual forefemoral breadth (fig. 1) which is greatest near the middle. Also characteristic is the coarsely punctate scutum. The dark and rather evenly colored wings are found also in *gracilis*. The almost wholly red and yellow body pattern is shared with *yumae*.

Oryttus mirandus (W. Fox)

Gorytes mirandus W. Fox, 1892. Canad. Ent. 24:152. Holotype male, Nevada (Acad. Nat. Sci. Phil.).

From 1892 until recently this species has been known only from the type. New records are from California: male, Cayton, Shasta Co., 21 July 1918 (E. P. Van Duzee); female, Berkeley, 4 August 1938 (N. Hardman); female, near Quincy, 16 July 1949 (P. D. Hurd); male, Sierraville, 26 July 1956 (R. M. Bohart); male, Sattley, 22 July 1949 (E. I. Schlinger); female, Carnelian Bay, Placer Co., 22 July 1959 (R. M. Bohart).

The black and yellow aspect, restricted, but unusually hairy depression beneath the male forefemur, two midtibial spurs in the male, roughened propodeal "cheeks", and small subantennal triangle are distinguishing. Superficially, there is a close resemblance to *O. umbonatus* which has similar markings and mostly clear wings. Differences in male forefemora (figs. 5, 6) and propodeal roughness are obvious, however, as indicated in the key.

Oryttus umbonatus (Baker)

Hoplisoides umbonatus Baker, 1907. Invertebrata Pacifica 1:163. Holotype male, Claremont, California (Pomona College).

Gorytes femoratus Bradley, 1920. Trans. Amer. Ent. Soc. 46:119. Holotype male, Claremont, California (Cornell University). New synonymy.

The species is known from perhaps a dozen specimens from drier areas of San Bernardino, Los Angeles, and Riverside counties of southern California. New localities with dates of May and June are: Lebec (E. I. Schlinger); Claremont; The Gavilan, Riverside Co. (P. H. Timberlake, R. C. Bechtel); San Jacinto Mts. (E. V. Stahl, C. D. Michener); Victorville (P. H. Timberlake).

The male has no depression beneath the slightly broadened forefemur (fig. 6) and the propodeal "cheeks" are smooth with a few faint wrinkles. As in *mirandus,* the male has two midtibial spurs, and the extensively clear wings are similar. However, the propodeal sculpture is differentiating in both sexes as indicated in the key.

Oryttus velutinus (Spinola)

Hoplisus velutinus Spinola, 1851. In Gay, Hist. fis. Pol. Chile, Zool. 6:337. Holotype male, Central Provinces, Chile (type supposedly at University of Turin, Italy).

In this species the basal tergite is unusually constricted and there are subbasal hair patches on sternites IV to VI of the male. Also, the male forefemur is simple (fig. 7), the male flagellum is only a little modified (fig. 8), the midtibiae are two-spurred in both sexes, and the pronotal ridge is more rounded than in other species and less closely appressed to the scutum. These features may warrant recognition of *Harpactostigma* as a subgenus. In sculpture *O. velutinus* is much like such Old World species as *O. infernalis* (Handlirsch).

Authenticated records are all from Chile, especially from the provinces of Santiago, Valparaiso, and Coquimbo.

Pate (1938) with some reservations, placed *Gorytes unicinctus* Brèthes from Argentina in the genus *Harpactostigma* along with *velutinus.* Recently (Bohart, 1967), I have placed *unicinctus* in *Liogorytes* R. Bohart.

Oryttus yumae R. Bohart new species

Male holotype: Length 10 mm. Head and thorax mostly orange, abdomen mostly yellow. Clypeus and lower frons, tibiae in front, prothorax mostly, scutellum and postnotum yellow; pattern on vertex, irregular spots on scutum, metapleuron partly, propodeal enclosure, spot above insertion of gaster, tergites I and II basally, black; wings partly clear, stain darkest along veins, in marginal cell, second and third submarginal cells, and out to wing tip; stigma and costal cell light reddish. Pubes-

cence fine, silvery, inconspicuous. Punctation mostly fine, punctures much smaller and farther apart on scutum than between ocelli, scattered and fine on scutellum, metanotum and tergites, moderate and sparse on mesopleuron, coarsely irregular and close on propodeum posteriorly. Flagellar article VIII modified as usual, but only about 1.5 times as long as either VII or IX in midline; frons narrowed below, least interocular distance more than eye breadth in front view, subantennal triangle about as in figure 11; propodeal enclosure obliquely striate; metapleural suture stitch-like (fig. 17); front femur expanded (fig. 4), somewhat flattened, concave beneath and pilose on basal two-thirds, greatest breadth at distal two-thirds where it is a little over one-third of femoral length; midtibia with only one apical spur; tergite I in dorsal view about one-half as broad as long and about one-half as broad as tergite II; points of sternite VIII separated by about 1.5 midocellus diameters.

Female: About as in male. Length 11 mm. Clypeus, legs mostly and tergite VI orange. Least interocular distance about 1.5 times eye breadth in front view, frons narrowed only a little below. Pygidium broad, well rounded apically, shiny with punctures well spaced (fig. 13).

Holotype male (UCD), 5 mi. se. of Bouse, Yuma Co., Arizona, on *Asclepias erosa,* 14 May 1966 (M. A. Cazier, J. H. and J. M. Davidson). Paratypes, one female (UCD), same data as type, one female (Arizona State Univ., Tempe), 18 mi. s. Gila Bend, Arizona, on *Viguiera deltoidea,* 8 May 1965 (M. Cazier, M. A. Mortenson, J. M. Davidson).

The moderately expanded forefemur (fig. 4) is distinctive for the male. In addition the roughened red propodeum with black enclosure is shared only by *lapazae* which has a much more coarsely punctate scutum. Reddish examples of *arapaho* approach *yumae* in appearance but the former have a much narrower subantennal triangle and a smooth, yellow-marked propodeum.

Literature Cited

Bohart, R. M. 1967. New genera of Gorytini. Pan-Pacific Ent. 43: 155–161.

Pate, V. S. L. 1938. Studies in the Nyssonine wasps, III. A revision of the genus *Harpactostigma*. Trans. Amer. Ent. Soc. 64: 57–77.